General Regulations

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Contents

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General Regulations:

Definitions

QN	QUALANOD; includes its secretariat and committees: EC means QUALANOD executive committee TC means QUALANOD technical committee or its nominated working group QN supervises the general licensees and may take on more or less responsibility depending on the resources of any general licensee.
GL	General licensee which may include national associations and QUALANOD. GLs can be accredited to ISO/IEC 17065 “Conformity assessment -- Requirements for bodies certifying products, processes and services”.
SL	sub-licensee or prospective sub-licensee
TI	Testing institute and includes its inspector (organization accredited to ISO 17025 and mandated by a GL to carry out inspections and/or tests)
PL	prospective sub-licensee including when an existing licensee wants to use the label for one or more additional licensable products.
Applicant	may be the manufacturer or a supplier of a new process, or an SL that wants to use the new process
“In writing”	correctly addressed email or by correctly stamped and addressed letter.

General Regulations:

I - Procedure for carrying out inspections of sub-licensees' plants

QN means Qualanod and includes its secretariat and committees. It supervises the general licensees and may take on more or less responsibility depending on the resources of any general licensee.
GL means general licensee which may include national associations and Qualanod. GLs can be accredited to ISO/IEC 17065 "Conformity assessment -- Requirements for bodies certifying products, processes and services".
SL means sub-licensee or prospective sub-licensee
TI means testing institute

The procedures below assume that the TI nominates the inspectors. However, if the GL is accredited to ISO/IEC 17065, it may nominate inspectors. In such cases, the procedures should be read accordingly.

The clauses and sub-clauses referred to below are those of the Specifications.

1. All information concerning the inspection results and their assessment shall be confidential.
2. The TI nominates a suitably qualified individual who has been approved by QN, referred to as the inspector, to carry out the inspection.
3. QN maintains and issues to GLs the inspection report form to be used by inspectors.
    a. GLs ensure that TIs have the most up-to-date inspection report form.
4. The GL notifies the TI which licensable products are to be covered by the inspection (see clause 8).
5. The inspector takes to all inspections the minimum mandatory equipment as shown in the table below.

Minimum mandatory equipment of inspectors

<table>
<tr><th colspan="2">TESTS</th><th>EQUIPMENT</th></tr>
<tr><td colspan="2">All types of anodizing
THICKNESS</td><td>Apparatus + references</td></tr>
<tr><td colspan="2">Architectural, industrial (unless sealing tests are not required by the customers) and decorative anodizing
SEALING (destructive)</td><td>MASS LOSS</td><td rowspan="2">Two calibrated weights for checking analytical balance</td></tr>
<tr><td rowspan="2">SEALING (non-destructive)</td><td>ANOTEST if required</td><td>References</td></tr>
<tr><td>DYE SPOT if required</td><td>Dye solution for the test providing its carriage is allowed by the airport security control
ISO 2143 chart</td></tr>
<tr><td colspan="2">Architectural anodizing
SURFACE ABRASION TEST if required</td><td>• Glass-coated abrasive paper previously validated using type P and type F standard specimens*
• Resilient support for the paper, eg rubber
• Type P and type F standard specimens*</td></tr>
<tr><td colspan="2">Architectural, industrial (unless sealing is not required by the customers) and decorative anodizing
pH METER</td><td>Buffer solutions or pre-calibrated pH meter</td></tr>
<tr><td colspan="2">All types of anodizing
SPECIFICATIONS AND TESTING PROCEDURES</td><td>Latest version of the Specifications and all update sheets</td></tr>
</table>

* Standard specimens are specimens of anodized aluminium produced using special conditions. Type P standard specimens pass the abrasion test while type F standard specimens fail the abrasion test. Qualanod can provide information on sourcing standard specimens.

6. The inspector carries out the inspection and completes the inspection report form including the inspector's conclusions which the SL also signs and may add comments. References for the processes of an inspection are shown by the table below as the relationships between the inspection report form, and the main clauses and appendices of the Specifications. Main references are shown in bold italic font. See below for the procedure to inspect anodized products.

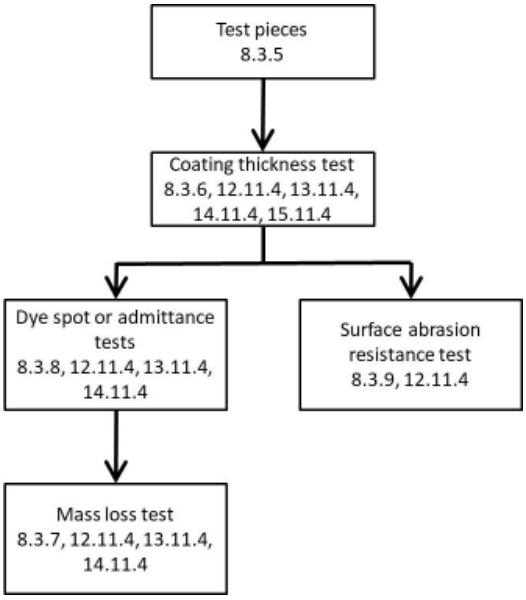
The relationships between the inspection report form, and the main clauses and appendices of the Specifications

Inspection report form	Specifications main clauses	Specifications appendices X = 12, 13, 14 or 15
2 The current inspection visit	6 Licensing anodizers	
3 General	8 Inspections	X.11 Inspections
4 Agreement with the customer	8.3.3 Agreements with customers 8.3.11 Register of complaints	***X.4 Agreements with customers*** X.5 Complaints
5 Processes of anodizing plants	8.4 Inspection of processes	X.11.5 Processes ***X.8 Requirements concerning processes*** X.9.5 Storage of products
6 Laboratory and testing equipment	8.3.4 Laboratory	***X.6 Laboratory and testing apparatus***
7 In-house control	8.3.10 In-house control	***X.9 Methods for process control*** ***X.10 Production control records***
8 Inspection of anodized products	***8.3 Inspection of products***	***X.11 Inspections***
9 Labelling	8.3.2 Use of the quality label ***7 Regulations for the use of a Qualanod quality label***	X.3 Quality label
10 Conclusions	6.1.3 Inspections	***X.11.2 Nonconformities***

7. The validation test for the licensee's glass-coated abrasive paper involves carrying out the manual surface-abrasion test using standard specimens but with the licensee's paper and resilient support. If the paper is valid, type P standard specimens pass the test and type F standard specimens fail the test. Otherwise, the paper is not valid.

Procedure to inspect anodized products

The flow diagram below shows relevant sections of the Specifications. Note that sealing tests are not required for hard anodizing.



Test pieces

The inspector marks samples for testing to prevent them from being exchanged.

Coating thickness test

The inspector should test only flat pieces.

The inspector checks all sheet and strip pieces with a significant surface greater than 2 m².

For other parts, the inspector applies statistical control on samples taken according to Specifications 8.3.6 table 1. As far as possible, s/he checks at least 30 parts for each anodizing type that is being inspected. S/he endeavours to include lots representing all anodizing lines and sealing processes operated by the licensee. Examples of sealing processes are hot water, steam, two-step cold sealing based on a nickel fluoride solution, and medium-temperature sealing based on a nickel salt solution. See below for circumstances where there is insufficient material available for the tests.

Dye spot or admittance tests

If a mass loss test is required, the inspector carries out ten dye spot or admittance tests, as applicable (see 9.3.3 and 9.3.4), on samples selected at random from those selected for the thickness tests but endeavouring to include material from all the anodizing lines and sealing processes. The test (dye spot or admittance) is chosen at the inspector's discretion, but s/he will normally select the method that was used by the SL for the selected lot. This is omitted if neither test is applicable, e.g. a dark bronze finish with cold sealing.

Mass loss test

The samples are selected from those selected for the thickness tests and are the ones with the highest dye spot or admittance values and preferably coloured- rather than clear-anodized. One mass loss test is carried out for each anodizing line and/or sealing process. The aim is to carry out the minimum number of mass loss tests that include all anodizing lines and all sealing processes. Different anodizing types do not affect the number of mass loss tests in an inspection. Here are some examples.

Number of anodizing lines	1	1	2		2		2		2	
Line identification	A	A	A	B	A	B	A	B	A	B
Sealing process identification	I	I & II	I	I	I	III	I & II	I	I & II	I & III
Number of mass loss tests	1	2	1	1	1	1	1 (II)	1	1 (II)	2 I& III

The method of 9.3.1 or 9.3.2 is applied depending on which method was used by the SL for the lot from which the sample was taken. If a mass loss test is performed at the testing institute, it must be completed within 14 days.

It is recommended that inspectors try to avoid taking samples for mass loss tests from hollow profiles and, if unavoidable, take samples only from the ends of hollow profiles with no uncoated areas. They should calculate the sum of the inside and outside surface areas of a hollow profile for the calculation of the mass loss per dm^2.

Repetition of the mass loss tests in the event of an unsatisfactory result is no longer required.

Surface abrasion resistance test

This applies only for architectural anodizing. If samples taken for thickness measurement come from a lot where the average coating thickness of all the pieces from that lot is 20.0 µm or greater, the inspector performs a surface abrasion resistance test on the sample with the highest thickness.

The test method (9.6.1 or 9.6.2) is chosen at the inspector's discretion. If the method of 9.6.1 is used and gives a negative result that is disputed by the anodizer, then the referee method of 9.6.2 is applied to determine whether the surface abrasion resistance is acceptable.

Insufficient material for product tests

This section describes the procedures for inspection visits to plants licensed for more than one type of anodizing but where there is insufficient or no material available for the thickness tests of one or more types.

Sufficient material

The amount of material required for the thickness tests is given in the Specifications 8.3.6. This says that at least 30 parts for each anodizing type shall be tested. If a lot consists of 1 to 10 parts, then all are tested. If a lot consists of 11 to 200 parts, then ten randomly selected parts are tested. Sampling for larger lot sizes is also included.

Here are some examples of sufficient material for one anodizing type.

- Three lots each consisting of 11 to 200 parts. Ten parts are selected from each lot for testing.
- Two lots consisting of 11 to 200 parts and five lots each consisting of two parts. Ten parts from each of the first two lots and all the parts from the other five lots are tested.
- One lot consisting of 11 to 200 parts and four lots each consisting of five parts. Ten parts from the first lot and all the parts from the other four lots are tested.
- Ten lots each consisting of three parts. All the parts are tested.
- 30 lots each consisting of one part. All the parts are tested.

Procedure during the inspection visit

[1] The inspector ascertains how much material is available for each of the anodizing types that are to be inspected.
Note 1. For the inspections to continue there must be sufficient material of at least one of the anodizing types. Otherwise, the inspections are negative for all those types and a repeat inspection visit is necessary.

[2] The inspector carries out the inspections as far as possible for all the types that are to be inspected.

[3] The inspector performs coating thickness tests on material from lots that are available even if there is insufficient material to provide 30 parts for one or more anodizing type.

[4] The inspector selects samples for sealing tests (dye spot, admittance, mass loss) and the surface abrasion resistance test as applicable (see above).

[5] When the inspector completes the inspection report form, he notes where there was insufficient material. He also completes Tables 1 to 4 of the inspection report form, as applicable, giving lot sizes and the results from all the parts tested.

[6] The procedures to assess the result of an inspection where there is insufficient or no material available are given in General Regulations VII.

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TI means testing institute and includes its inspectors.
PL means prospective sub-licensee including when an existing licensee wants to use the label for one or more additional licensable products.

The procedures below assume that the TI nominates the inspectors. However, if the GL is accredited to ISO/IEC 17065, it may nominate inspectors. In such cases, the procedures should be read accordingly.

The clauses referred to below are those of the Specifications.

All information concerning inspection results and their assessment shall be confidential.

1. GL receives the application and verifies that sufficient information has been provided. The GL and PL agree the licensable products for which the PL seeks to use the label.
    a. If a previous application for a sub-licence was unsuccessful or a sub-licence was withdrawn, a new application cannot be accepted until six months have elapsed.

2. GL designates the TI responsible for inspections.

3. GL informs PL of the costs of a sub-licence and the contact details of the designated TI, and asks for confirmation of the application.
    a. GL receives confirmation from PL.

4. If requested by the PL, the GL asks the TI to carry out a preliminary visit.
    a. The TI carries out the preliminary visit and reports the results to the PL and GL (the results cannot be used for granting a sub-licence).

5. If GL and PL agree to continue the application, GL notifies QN of the application and designated TI.

6. GL instructs the TI to carry out inspections for the agreed licensable products by following diagram A of the *Specifications* clause 6 and the *General Regulations II - Procedure for carrying out inspections of sub-licensees’ plants*. **It is not necessary for each licensable product to be dealt with at a separate visit to the plant.**

7. TI carries out inspections as instructed by GL.
    a. TI agrees date of first inspection visit with PL to ensure that responsible persons of the plant are present.
    b. TI carries out subsequent inspection visits unannounced unless other arrangements are approved by QN.
        i. TI informs GL and QN that unannounced inspection visits are not possible and suggests other arrangements.
        ii. QN decides or approves other arrangements and notifies TI and GL.

8. TI records results of each inspection visit on the inspection report form provided by QN.
    a. The inspector and the PL sign off the inspector’s conclusions; the PL may add comments.

9. TI sends inspection report to GL.

10. GL sends a copy of the inspection report to QN within three months after the inspection.

11. See General Regulations VII for the procedure to assess the results of an inspection
    a. An accredited GL assesses the results in the inspection form and decides whether the inspection visit was fully satisfactory or fully unsatisfactory, or partially satisfactory if it was satisfactory for some of licensable products for which the PL wanted to use the label but not for others (QN may be consulted for guidance).
    b. QN makes the decision for a non-accredited GL and informs it of the results and, if they are not deemed fully satisfactory, provides a full explanation for the conclusion.

12. GL sends PL: i) notification of the decision; ii) a copy of the inspection report; iii) if the results of the inspection visit are not deemed fully satisfactory, a full explanation for the conclusion and the deadline for submitting an appeal.
    a. An accredited GL sends to QN copies of i) and iii).

13. If the GL receives an appeal from the PL (which must be within ten days after the PL has received notification of the decision):
    a. An accredited GL re-assesses the results in the inspection form and decides whether the inspection visit was fully satisfactory, fully unsatisfactory or partially satisfactory (QN may be consulted for guidance). It sends PL and QN notification of its decision and a full explanation for that conclusion.
    b. a non-accredited GL notifies QN of the appeal.

14.
    a. If PL is not satisfied with the result of an appeal to an accredited GL, it may appeal to QN.
    b. QN deals with an appeal to a non-accredited GL.

15. QN sends GL and PL notification of its decision and a full explanation for that conclusion. QN's decision is final.

16. Following an unsatisfactory or partially satisfactory inspection visit where plant and/or equipment did not meet the requirements, another inspection visit may be made only when the PL has given notification to the GL that the deficiencies have been rectified.
    a. GL informs the TI when a repeat inspection may take place
    b. TI carries out another inspection as instructed by the GL.

17. If the PL decides to withdraw its application for a licence for one or more licensable products, it notifies the GL. The GL informs the TI.

18. If at least two inspections are satisfactory for each licensable product for which PL seeks to use the label, the GL can grant a sub-licence to the PL subject to ratification by QN.

19. Following ratification from QN, the GL and PL sign a contract containing at least the requirements exhibited by the sample contract below. This does not apply in the case of existing sub-licensees.

20. GL notifies QN that the contract has been signed.
    a. If PL is up to date in the payment of sub-licence fees, QN issues to it a sub-licence certificate or a modified certificate as appropriate.
    b. QN adds PL's details to the register of sub-licensees and the list on the website.

Sample Sub-Licence Agreement concerning the QUALANOD Quality Label

Between ..... (General Licence Holder, GL) domiciled in ..... as holder of the General Licence for the Qualanod quality label and authorized to utilize the label by issuing sub-licences and
..... in .....
(hereinafter the "sub-licensee")

The following agreement was reached today.

1. The sub-licensee states that he possesses copies of and is acquainted with the contents of the "Specifications for the QUALANOD quality label for sulphuric acid anodizing of aluminium" hereafter referred to as the Specifications, and particularly the clause "Regulations for use of the quality label" hereafter after referred to as the Regulations.

The sub-licensee hereby undertakes
a) not to use the said label, either themselves or through their representatives, for licensable products other than those listed in the sub-licence according to the Regulations;
b) to permit the testing or examination of his products and/or to supply the samples necessary under the clauses “Licensing anodizers” and “Inspections” in the Specifications;
c) to comply with the Regulations and Specifications in every respect;
d) in the event that production of the goods falling under the sub-licence is discontinued the GL shall be informed at once;
e) to report all changes of name or address promptly to the GL;
f) to report immediately to the GL any contravention or any unauthorized or incorrect use of the label which comes to his notice and to cooperate with the GL and support them in preventing the misuse of this label;
g) to pay the corresponding fees and costs (annual fee and inspection costs).
If investigation for reported misuse of the quality label confirms the allegation, the cost of the investigation shall be borne by the misuser. If the allegation proves unjustified then the cost shall be borne by the informer.

2. Following this statement by the sub-licensee which is hereby acknowledged, the GL undertakes
a) to arrange for a sub-licence certificate to be issued to the sub-licensee entitling the latter to use the label according to the Regulations for the licensable products listed in the sub-licence;
b) to take all appropriate steps for the protection of the label in ..... (country);
c) to prevent its unauthorized or incorrect use;
d) to safeguard the interests of the sub-licensee as the authorized user.

3. The GL and the sub-licensee agree herewith that the present contract shall continue valid until such time as the sub-licence certificate, which shall be issued according to this contract, shall be withdrawn as stipulated in the Specifications.

4. The right to use the quality label shall be limited to a period of one year. If all the above mentioned obligations of the sub-licensee are met, this right shall be continued, in each case for a further period of one year. If the qualifications for some reason lapse, the GL may give a four months' notice of termination. The sub-licensee is also entitled at all times and with immediate effect, to waive the right to use the quality label. In this case, the procedure for withdrawal of the sub-licence set out in the Specifications shall apply.

Place, date: .....
The General Licence Holder (GL)
....
The sub-licensee
....

General Regulations:

III - Procedure to renew a sub-licence

QN means Qualanod and includes its secretariat and committees. It supervises the general licensees and may take on more or less responsibility depending on the resources of any general licensee.
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SL means sub-licensee
TI means testing institute and includes its inspectors

The procedures below assume that the TI nominates the inspectors. However, if the GL is accredited to ISO/IEC 17065, it may nominate inspectors. In such cases, the procedures should be read accordingly.

The clauses referred to below are those of the Specifications.

All information concerning the inspection results and their assessment shall be confidential.

1. GL assumes that SL wants to renew its licence for all the licensable products of its licence unless the SL has notified it otherwise.

2. GL initiates the renewal process by instructing the TI to carry out inspections for the licensable products by following diagram A of the *Specifications* clause 6 and the *General Regulations II - Procedure for carrying out inspections of sub-licensees’ plants*. **It is not necessary for each licensable product to be dealt with at a separate visit to the plant.**

3. TI carries out inspections as instructed by GL.
    a. TI carries out inspections unannounced unless other arrangements are approved by QN
        i. TI informs GL and QN that unannounced inspections are not possible and suggests other arrangements
        ii. QN decides or approves other arrangements and notifies TI and GL.

4. TI notifies the GL if unforeseen circumstances prevent it from carrying out an inspection
    a. On receipt of that notification, the GL may suspend inspections for a maximum of 12 months. It consults the TI in reaching its decision.
    b. GL notifies SL, TI and QN of its decision.
    c. If no inspection has taken place within the twelve month period, the GL withdraws the sub-licence.

5. TI records results of each inspection on the inspection report form provided by QN
    a. The inspector and the SL sign off the inspector’s conclusions; the SL may add comments.

6. TI sends inspection report to GL.

7. GL sends a copy of the inspection report to QN within three months after the inspection.

8. See General Regulations VII for the procedure to assess the results of an inspection
    a. An accredited GL assesses the results in the inspection form and decides whether the inspection visit was fully satisfactory or fully unsatisfactory, or partially satisfactory if it was satisfactory for some of licensable products for which the SL wanted to use the label but not for others (QN may be consulted for guidance).

b. QN makes the decision for a non-accredited GL and informs it of the results and, if they are not deemed fully satisfactory, provides a full explanation for the conclusion.

9. GL sends SL: i) notification of the decision; ii) a copy of the inspection report; iii) if the results of the inspection visit are not deemed fully satisfactory, a full explanation for the conclusion and the deadline for submitting an appeal.
    a. An accredited GL sends to QN copies of i) and iii).

10. If the GL receives an appeal from the SL (which must be within ten days after the PL has received notification of the decision):
    a. an accredited GL re-assesses the results in the inspection form and decides whether the inspection visit was fully satisfactory, fully unsatisfactory or partially satisfactory (QN may be consulted for guidance). It sends SL and QN notification of its decision and a full explanation for that conclusion.
    b. a non-accredited GL notifies QN of the appeal.

11.
    a. If SL is not satisfied with the result of an appeal to an accredited GL, it may appeal to QN.
    b. QN deals with an appeal to a non-accredited GL.

12. QN sends GL and SL notification of its decision and a full explanation for that conclusion. QN's decision is final.

13. Following an unsatisfactory or partially satisfactory inspection visit where plant and/or equipment did not meet the requirements, a repeat inspection visit is carried out within two months of the SL receiving from the GL notification that the inspection was not fully satisfactory.
    a. GL informs the TI when a repeat inspection may take place
    b. TI carries out another inspection as instructed by the GL.

14. If the SL decides to withdraw its application for a licence for one or more licensable products, it notifies the GL. The GL informs the TI.

15. If at least two inspections are satisfactory per calendar year (1st January to 31st December) for each licensable product for which SL seeks to use the label, the GL can renew the SL's sub-licence subject to ratification by QN.
    a. In other circumstances, QN or GL, if it is accredited to ISO/IEC 17065, decides on renewal.

16. GL notifies QN that the sub-licence has been renewed
    a. If SL is up to date in the payment of sub-licence fees, QN issues to it a sub-licence certificate.

17. GL notifies QN of any change of name or address of a SL.
    a. QN modifies the SL's details on the register of sub-licensees and the list on the website.

General Regulations:

IV - Procedure for the withdrawal of a sub-licence

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SL means sub-licensee
TI means testing institute and includes its inspectors
“In writing” means by correctly addressed email or by correctly stamped and addressed letter

The procedures below assume that the TI nominates the inspectors. However, if the GL is accredited to ISO/IEC 17065, it may nominate inspectors. In such cases, the procedures should be read accordingly.

The clauses referred to below are those of the Specifications.

All information concerning the inspection results and their assessment shall be confidential.

1. GL withdraws the sub-licence if there have not been at least two satisfactory inspections per calendar year (1st January to 31st December) for any licensable products for which the plant seeks to use the label.
    a. In other circumstances QN or the GL, if it is accredited to ISO/IEC 17065, decides.
2. TI notifies the GL if unforeseen circumstances prevent it from carrying out an inspection
    a. On receipt of that notification, the GL may suspend inspections for a maximum of 12 months. It consults the TI in reaching its decision.
    b. GL notifies SL, TI and QN of its decision.
    c. If no inspection has taken place within the twelve month period, the GL withdraws the sub-licence.
3. GL withdraws the sub-licence if the SL no longer complies with the Regulations and, in particular, in the event of any unauthorized or incorrect use of the quality label (see clause 7).
    a. GL gives SL four months prior notice in writing of any changes to those regulations before those changes become effective.
4. The GL withdraws the sub-licence if the SL ceases to trade.
    a. GL receives all objects on which the quality label is shown or instructs on their keeping pending the application for a sub-licence by the legal representatives or successors in business of the SL.
    b. The legal representatives or successors in business of the SL are entitled to continue to use the quality label for three months pending the grant of a new sub-licence unless the GL issues instructions to the contrary.
5. The GL withdraws the sub-licence if the SL has been proven not to respect relevant national laws.
6. If QN can demonstrate that conditions for the withdrawal of a sub-licence have been met without the GL having intervened, it may direct the GL to withdraw the sub-licence.
7. If a sub-licence is withdrawn, GL notifies the SL immediately in writing. The withdrawal has effect from the date of receipt of the notification.
    a. GL disseminates cancellation of a sub-licence by courier.
    b. GL informs TI and QN of withdrawal of a sub-licence.

1. Introduction

Clause 10 of the Specifications provides for a procedure to test a new process and, if the testing is successful, for Qualanod to grant approval for that new process. It also explains the circumstances under which the procedure can be undertaken and where approval of a new process is required before it may be used by licensees.

This document describes the procedure for the testing and approval of new processes for use in architectural anodizing.

2. Definitions

QN means QUALANOD secretariat
EC means QUALANOD executive committee
TC means QUALANOD technical committee or its nominated working group
GL means general licensee which may include national associations and Qualanod. GLs can be accredited to ISO/IEC 17065 “Conformity assessment - Requirements for bodies certifying products, processes and services”.
SL means sub-licensee
TI means testing institute (organization accredited to ISO 17025 and mandated by a GL to carry out inspections and/or tests)

The applicant may be the manufacturer or a supplier of the new process, or an SL that wants to use the new process.
The clauses referred to below are those of this document.

3. Assessment and evaluation

The assessment can comprise the following stages.

A. A review by TC of the information sent by the applicant.
B. Independent laboratory tests carried out by a TI.
C. Outdoor weathering tests of specimens for one and three years (except for renewals – see below)
D. Evaluation by the TC.

The applicant shall bear all the costs associated with the specimen preparation and the testing of stages B and C.

4. Approvals

Provisional approval may be granted only after the successful completion of the laboratory tests (stage B) and one year’s outdoor exposure and is valid for two years after which it lapses. The approval procedure would normally be terminated if any one or more of the mass loss test, the surface abrasion resistance test, the AASS test, the thermal craze resistance test and the one-year outdoor exposure test is unsatisfactory. But the TC may consider other factors, at its discretion, when it decides whether to recommend that the EC grants provisional approval. The TC may permit the repetition of a test. If the one-year outdoor exposure test is unsatisfactory and provisional approval is not granted, the applicant may continue the three-year outdoor exposure test, at the end of which the TC will decide whether to recommend that the EC grants full approval.

Final approval may be granted only after the successful completion of the three years' outdoor exposure (stage C), and is valid for three years. It may be renewed every three years.

The applicant may apply for a renewal of the final approval (see section 6 below). For the renewal to be granted, stages A, B and D have to be successfully completed. Outdoor exposure testing is normally not necessary.

5. Responsibilities

The applicant may contact QN for advice on fulfilling its responsibilities as described below:

5.1	Applicant	**Enquires** of QN whether the use of the process is well-established or has current approval. If necessary, QN confers with TC. If the response is positive, the process may be used by SLs. If the response is negative, go to next step.
5.2	Applicant	Sends **application** to GL. • GL sends application to QN for consideration by TC
5.3	TC	**Reviews** the information from the applicant and decides whether it is complete.
5.4	QN	**Informs** applicant and GL of the TC's decision. If the information is incomplete, requests the additional information. If the information is complete, go to next step.
5.5	GL	**Informs** applicant and QN which TI will conduct the tests.
5.6	Applicant	• **Arranges** for the provision of test specimens prepared as specified in clause 7. • **Arranges** for the thickness and gloss data described in clause 7 to be sent for evaluation as instructed by QN. • **Instructs** the TI to perform the laboratory tests as specified in 8.1 and 8.2, and to send the test results including the salt spray test specimens for evaluation as instructed by QN. • **Arranges for the outdoor exposure tests to be carried out as specified in 9.1, and including:** (i) sending written confirmation to the GL (GL informs QN) that the specimens have arrived at the two exposure sites and that the exposure tests have started; (ii) the withdrawal of specimens at the required times: (iii) sending the withdrawn specimens for evaluation as instructed by QN.
5.7	TC	Evaluates the **laboratory test results and the salt spray test specimens** returned after completion of those test. If the assessment is unsuccessful, the applicant has the option of continuing the approval process. QN informs the applicant and GL of the decision.

5.8	TC	Evaluates the **laboratory test results and the specimens returned after one year of outdoor exposure.**
		• If the assessment of the specimens from both outdoor exposure sites are successful, it recommends that the EC grants provisional approval of the new process for a period of two years.
		• If the assessment of the specimens from both outdoor exposure sites are unanimously agreed to be successful, the provisional approval of the new process for a period of two years can be granted without permission from the EC. Provided that the laboratory test results and the salt spray test specimens are evaluated as positive.
		  • Point 5.9 does not apply in this case.
		  • QN informs the applicant and GL of the decision.
		If provisional approval is granted, QN includes the new process on the QUALANOD website with its approval number and indicating "provisional approval".
		• If the assessment is unsuccessful, the applicant has the option of continuing the approval process.

5.9	EC	Decides whether to **grant provisional approval** of the new process for a period of two years. • QN informs the applicant and GL of the decision. If provisional approval is granted, QN includes the new process on the QUALANOD website with its approval number and indicating “provisional approval”.
5.10	TC	Evaluates the **specimens returned after three years of outdoor exposure** and, as appropriate, considers the experience of the new process since the granting of provisional approval. • If the assessment of the specimens from both outdoor exposure sites is successful, it recommends that the EC grants final approval of the new process for a period of three years.
5.11	EC	Decides whether to **grant final approval** of the new process for a period of three years. • QN informs the applicant and GL of the decision. If final approval is granted, QN includes the new process on the QUALANOD website with its approval number and indicating “final approval”.

Renewal process of final approval

5.12	QN	**Informs applicant and GL six months before final approval expires.**
5.13	Applicant	Informs GL and QN whether it wants to renew final approval.
5.14	GL	Informs applicant and QN which TI will conduct the **laboratory tests** if it is decided to renew final approval.
5.15	Applicant	• Arranges for the provision of test specimens prepared as specified in clause 7 for only the laboratory tests. • Arranges for the thickness and gloss data described in clause 7 to be sent for evaluation as instructed by QN. • Instructs the TI to perform the laboratory tests as specified in 8.1 and 8.2, and to send the test results including the salt spray test specimens for evaluation as instructed by QN.
5.16	TC	Evaluates the **laboratory test results** and considers the experience of the new process since the granting of final approval. If the assessment is successful, recommends that the EC renew final approval of the new process for a period of three years.
5.17	EC	Decides whether to **renew final approval** of the new process or product for a period of three years. • QN informs the applicant and GL of the decision.

6. Application for assessment

The application shall be written in English. It shall include a description of the process, a technical data sheet showing the most important properties and instructions for the operation or use of the process. TC may ask for more information at its discretion.

If, after the granting of provisional or final approval, the applicant changes the instructions for the operation of a processor the use or the formulation of a chemical product, the process shall not be used by licensees until it has been approved by QN. If the applicant wants the process to be used, it shall submit an application to the GL and QN. The application shall include a description of the changes. TC may compare the instructions and data sheet provided by the applicant at the time of the initial application with those issued to licensees at a later time. In these circumstances, QN shall decide the requirements for approval to be granted.

If the assessment of a new process has been unsuccessful, and the applicant wants the new process to be tested again, it shall submit an application for testing as specified in clause 5. The application shall include a description of any changes to the instructions for the operation of the process or the use or the formulation of the chemical product. TC may compare the instructions and data sheet provided by

the applicant at the time of the initial application with those provided at the time of the application for repeat testing.

The applicant may decide that it wants the application handled anonymously at this stage. If so, it shall make this clear in its application.

7. Specimen preparation

The specimens shall be prepared in one of the following.

- In the TI's laboratory or pilot line.
- In the applicant's laboratory or pilot line under the supervision of a person representing the TI.
- In an SL's laboratory or pilot line under the supervision of a person representing the TI.
- In an SL's production line under the supervision of a person representing the TI. This is permitted only for processes that already have final approval from QUALANOD.

Special care should be paid to the preparation of specimens; they shall be free of defects. Because the tests are comparative between two processes, it is important that the chemical composition and microstructure of the specimens are the same. The specimens shall come from the same metal casting batch or coil. The applicant shall provide an analysis of the chemical composition of the metal if so requested by the TC.

Specimens produced with the new process are compared with standard specimens produced using conventional methods.

The test specimens shall be as follows.

- Test specimens shall be AA 6063 or 6060 flat-panel extrusions or AA 5005 sheet with a thickness of about 2 mm. The specimens for outdoor exposure shall have dimensions preferably 200 mm by 100 mm but not less than 150 mm by 100 mm. The specimens for the acetic acid salt spray test shall have dimensions not less than 150 mm x 70 mm x 1 mm.
- Test specimens of the required size shall be cut from larger areas of material using a guillotine or a saw before the application of the surface treatment processes. Any burrs shall be removed without damaging adjacent areas of the surfaces.
- Test specimens shall be marked for identification purposes before the application of the surface treatment processes. The marking shall be made as small as is practical and on those areas of the specimens that are not subjected to visual assessment. Specimens for outdoor exposure or salt spray testing shall have marking that is durable and remains legible over the whole period of the test. Stamping is a suitable method.

Unless the TC agrees otherwise, the processing conditions for the standard specimens shall be as follows.

- Specimens shall be subject to surface preparation E6 as described in clause 11.
- Separate specimens shall be anodized to class AA 15 and class AA 20, each class in the same anodizing batch.
- Anodizing shall be carried out in a sulfuric acid solution containing 180 ± 2 g/l free sulfuric acid and 5 to 10 g/l dissolved aluminium made up with deionized water, held at 20 °C ± 0,5 °C, and agitated by air agitation or solution recirculation. The current density shall be 1,5 ± 0,1 A/dm^2.
- Different specimens of each class shall be clear-anodized aluminium and colour-anodized aluminium coloured to a dark bronze (C34) using a tin-based electrolyte.
- Specimens shall be sealed in deionized water at a temperature no lower than 96 °C for 3 min per micrometre of coating thickness. An anti-smut additive shall be used.

Test specimens representing the new process shall be produced using the same processing conditions as for the standard specimens except those conditions associated with the new.

Specimens for laboratory tests and for outdoor exposure (not required for a renewal) shall be produced at the same time. This means that there will be eight sets of specimens (two thickness classes x two colours x two processes) which will go forward for testing. Each test shall be carried out on triplicate specimens. Each set shall comprise at least 21 specimens and one specimen retained for control

purposes. Control specimens shall be made available to TC as requested to determine changes in properties, eg colour, as a result of exposure of test specimens. The number of specimens required is summarized in table 1 (next page).

Table 1. Distribution of test specimens

Test (see clauses 8 & 9)	Number of specimens per set	Total number of specimens
Control	1	8‡
Mass loss test	3	24
Dye spot, admittance, surface abrasion and thermal craze resistance tests	3	24
Acetic acid salt spray test	3	24‡
Outdoor exposure – site A	One-year exposure: 3 Three years' exposure: 3	48‡
Outdoor exposure – site B	One-year exposure: 3 Three years' exposure: 3	48‡
Total	22	176
‡ The specular gloss at 60° shall be measured for these specimens		

Before applying laboratory or outdoor exposure tests, the average thickness of the coatings of all specimens shall be measured following the procedures of the current edition of the Specifications. Before applying outdoor exposure tests, the specular gloss at 60° of specimens indicated in table 1 shall be measured following the procedures of the current edition of the Specifications. These thickness and gloss data shall be sent for evaluation as instructed by QN.

Test specimens before testing and control specimens shall be safely stored in a room with a controlled temperature and a relative humidity of 65% or less, or in a desiccator, or sealed in plastic bags with desiccant.

It is important to maintain specimen data records particularly to prevent confusion over the processing conditions used for outdoor exposure specimens. The specimen marking and the records shall use the following identification system of two letters and two numbers.

- S indicates the standard process. N indicates the new process
- 15 indicates AA 15. 20 indicates AA 20.
- C indicates a coloured specimen. U indicates an uncoloured specimen.
- The final number, 1 to 22, identifies the individual specimen in the set.

Thus, N15C9 would identify the ninth specimen of the set of coloured AA 15 specimens produced using the new process.

8. Laboratory tests (stage B)

8.1 Procedures for the laboratory tests

Each test shall be carried out on triplicate specimens.

The series of tests shall comprise the following, which shall be carried out in compliance with section 12 of the current edition of the Specifications or as specified below for the AASS test. The sections of the Specifications describing the tests are included for reference purposes.

- Coating thickness using the eddy current method (9.2)
- The mass loss test with predip for sealing (9.3.1)
- The dye spot test for sealing (9.3.3)
- The admittance test for sealing (9.3.4)
- The acetic acid salt spray (AASS) test for corrosion resistance (9.5).
- The production control test for surface abrasion resistance (9.6.1).
- The thermal craze resistance test (9.13).

8.2 Procedures for the acetic acid salt spray (AASS) test

The AASS test is performed as specified in ISO 9227.

The corrosivity of the salt spray cabinet shall be checked following the method for evaluating cabinet corrosivity specified in ISO 9227. During permanent operation, the time interval between corrosivity checks shall not be more than three months. The test report shall include the date of the last corrosivity check.

The duration of the test shall be 1000 h. The specimens shall not be cleaned during exposure. Visual examination (including photography) of the test specimens to make a subjective evaluation of the degree of deterioration may be carried out after 500 h and/or 750 h as well as after 1000 h. If such an examination is carried out, the results shall be included in the test report. On completion of the test, the specimens shall be washed with water (without scrubbing) to remove corrosive agents from the surface that could otherwise promote further corrosion during storage and transportation and dried without applying heat. On completion of the test, the surface of each specimen shall be sponged with a mild soap solution, rinsed with water and then allowed to dry without applying heat. Photograph all the test specimens. Send copies as instructed by QN.

8.3 Evaluation of AASS test results by the Technical Committee

The aim of the test is to assess the resistance to pitting corrosion of the aluminium substrate. Thus, the TC shall rate the corrosion following the method specified in ISO 10289 and the instructions below.

1. Mask to define an inspection area of 50 cm^2 on each specimen.
2. Use dot charts from ISO 10289 and/or ISO 8993 to determine A, the percentage of the inspection area showing base metal corrosion.
3. Determine the rating, R_P, if necessary, by using the formula $R_P = 3\ (2 - \log A)$. Note: for $A \leq 0{,}05\%$, $R_P = 10$.
4. Calculate:
   i. R_{PN}, the average of the R_P values for each set of new-process specimens
   ii. R_{PS}, the average of the R_P values for each set of standard specimens.
5. Compare each R_{PN} with its equivalent R_{PS}. If $R_{PS} - R_{PN} > 1$, then the new-process specimens are unsatisfactory.
6. If any of the sets of new-process specimens is unsatisfactory, then the result of the AASS testing is negative.
7. Report the values of R_P for every specimen and the result to QN.
8. Where multiple evaluations are carried out separately at different locations, QN compares the results. The TC makes the final decision following the majority result.

The TC may take other factors into consideration when deciding whether the specimens prepared using the new process performed satisfactorily in the AASS test.

9. Outdoor weathering tests (stage C)

9.1 Procedures for outdoor exposure testing

Outdoor exposure tests shall be applied to specimens produced with the new process and to standard specimens, i.e. the two thickness classes, and natural and dark bronze finishes.

Specimens (in triplicate) shall be exposed for one year and three years at two sites, Genova and Hoek van Holland, either or both of which may be substituted by equivalent exposure sites if specifically approved on a case-by-case basis by TC. In making its decision, TC would expect to be provided with information on the exposure site as specified in ISO 9223 “Corrosion of metals and alloys -- Corrosivity of atmospheres -- Classification, determination and estimation” including: location (longitude and latitude); elevation; annual average temperature, relative humidity, sulfur dioxide deposition rate and chloride deposition rate; corrosivity class for aluminium. Exposed specimens on the site shall not be exposed to unusual local sources of dirt or particulates.

The outdoor exposure shall follow the requirements of ISO 8565 “Metals and alloys -- Atmospheric corrosion testing -- General requirements” with changes as described in this document. In particular, note the following points.

- The test specimens shall be subjected to open-air exposure, ie not sheltered exposure.
- Each specimen shall be set with its longitudinal axis at 45° and facing towards the equator.
- Each specimen shall be fixed to its rack using fixing points at or near the edges of the specimen. The area occupied by the fixing points shall be as small as possible. Insulating material shall separate the specimen from the rack and any metallic fixing device. This prevents galvanic corrosion.
- The reverse side of each specimen shall not be covered other than at fixing points. This enables any changes in appearance to be assessed after exposure.
- No specimen shall be fixed to a rack so that it is less than 0,75 m above the ground. Any vegetation below each specimen shall be controlled and maintained below 0,2 m.
- The specimens shall not be cleaned during exposure.

Three specimens shall be withdrawn after one-year exposure; the remaining three specimens shall be withdrawn after a further two years. On withdrawal, the specimens shall be washed with water (without scrubbing) to remove corrosive agents from the surface that could otherwise promote further corrosion during storage and transportation, and dried without applying heat. On withdrawal, the surface of each specimen shall be sponged with a mild soap solution, rinsed with water and then allowed to dry without applying heat. Photograph all the test specimens. Send copies as instructed by QN.

Before they are evaluated, withdrawn test specimens shall be safely stored in a room with a controlled temperature and a relative humidity of 65% or less, or in a desiccator, or sealed in plastic bags with desiccant.

9.2 Evaluation of outdoor exposure test results by the Technical Committee

The TC shall rate the performance of the specimens following the method specified in ISO 10289 and the instructions below.

1. Mask to define an inspection area of 50 cm^2 on each specimen.
2. Examine each specimen to determine the type of surface deterioration (normally only A, B or K – precise identification of the type is not important)
   - A. Staining and/or colour change
   - B. Dulling with little or no degradation of the coating
   - E. Surface pitting not extending through to the basis metal
   - F. Flaking, peeling, spalling
   - G. Blistering
   - H. Cracking
   - I. Crazing
   - K. Surface material arising from the degradation of the coating

   And the degree of degradation
   - vs very slight amount
   - s slight amount
   - m moderate amount
   - x excessive amount
3. Use dot charts from ISO 10289 and/or ISO 8993 to determine A_P, the percentage of the inspection area showing base metal corrosion.
4. Make a subjective assessment of A_A, the percentage of the inspection area showing surface deterioration.
5. Determine the ratings, R_P and R_A, if necessary, by using the formula $R = 3\ (2 – \log A)$. Note that for $A \leq 0{,}05\%$, $R = 10$.

6. Calculate:
    i. R_{PN}, the average of the R_P values for each set of new-process specimens
    ii. R_{PS}, the average of the R_P values for each set of standard specimens
    iii. R_{AN}, the average of the R_A values for each set of new-process specimens
    iv. R_{AS}, the average of the R_A values for each set of standard specimens
7. Express the performance rating as, for example, 9/2 m A where R_{PN} = 9, R_{AN} = 2 and there is a moderate amount of staining and/or colour change.
8. Tabulate and compare the performance ratings of the new-process specimens and those of the equivalent standard specimens.
9. Make a subjective assessment whether, overall, the performance ratings of the new-process specimens and those of the equivalent standard specimens are significantly different.
10. If the ratings are significantly different for any of the equivalent sets of specimens, then the result of the outdoor exposure testing is negative.
11. Report the performance ratings for every specimen and the result to QN.
12. Where multiple evaluations are carried out separately at different locations, QN compares the results. The TC makes the final decision following the majority result.

The table below shows some examples of outdoor exposure performance ratings and tentative results.

Standard specimens	New-process specimens	Result	Comment
10/4 s A	9/4 s A	positive	The acceptance criterion is $R_{PS} - R_{PN} \leq 1$
10/4 s B	10/3 s B	positive	$R_{AS} - R_{AN} \leq 1$ and $R_{AN} \leq 10\%$.
10/5 s E	10/3 s E	positive	$R_{AS} - R_{AN} > 1$ and $R_{AN} \leq 10\%$.
10/3 s K	10/2 s K	negative	$R_{AS} - R_{AN} \leq 1$ and $R_{AN} > 10\%$.
10/4 s A	10/2 s A	negative	$R_{AS} - R_{AN} > 1$ and $R_{AN} > 10\%$
10/2 m A	10/2 m B	positive	A, B, E and K types of deterioration are considered to be not inherently more or less acceptable than each other.
10/3 vs A	10/3 s A	positive	Small differences are probably not cosmetically significant. Also applies to B, E and K.
10/3 s B	10/3 m B	negative	This difference is probably significant. Also applies to A, E and K.
10/3 m K	10/3 x K	negative	This difference is most probably significant. Also applies to A, B and E.

The TC may take other factors into consideration when deciding whether the specimens prepared using the new process performed satisfactorily during outdoor exposure.

1. Scope

This procedure sets out the criteria applied by QUALANOD for the assessment of inspection reports for granting and renewing licences to anodizers.

2. Reference standards

- QUALANOD Specifications (latest edition)
- EN 17000: Conformity assessment - Vocabulary and general principles
- EN 45011/ISO 17065
- ISO 17067: Conformity assessment — Fundamentals of product certification and guidelines for product certification schemes

3. Definitions

NONCONFORMITY: failure to comply with a requirement, leading to a repetition of the inspection.
ISSSUE: failure to comply with a requirement not included in the list of nonconformities defined from time to time by QUALANOD.

FIRST INSPECTION: see Specifications 6.1.3 diagram A

SECOND INSPECTION: see Specifications 6.1.3 diagram A

REPEAT INSPECTION: see Specifications 6.1.3 diagram A

CORRECTION: action taken to eliminate (remedy) a detected nonconformity or issue.

CORRECTIVE ACTION: action taken to eliminate the cause of a detected nonconformity or issue in order to prevent recurrence.

PREVENTIVE ACTION: action taken to eliminate the cause of a potential nonconformity or issue.

4. Specifications section 6.1.3

An inspection identifies nonconformities and issues. The nonconformities for each anodizing type are listed in the appendices of the Specifications.

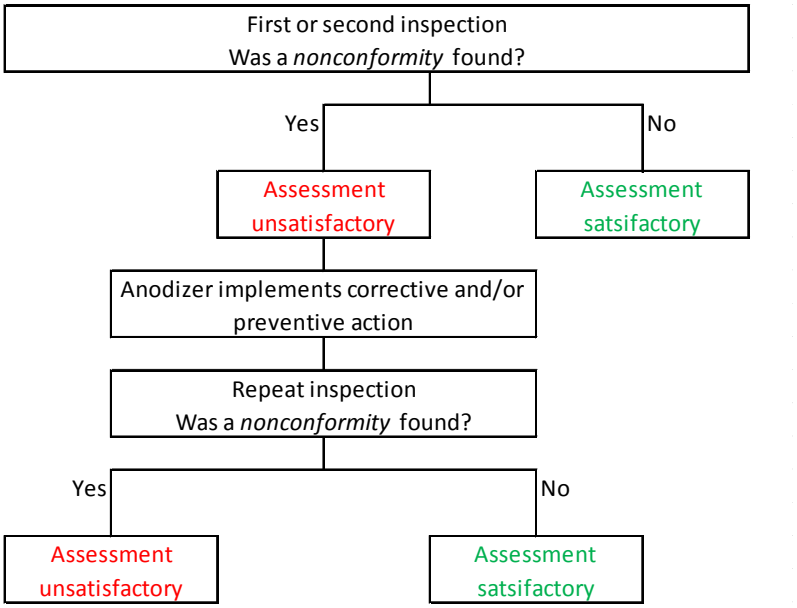
If one or more nonconformities are found at a first or second inspection for a licensable product, then a repeat inspection is carried out (see Specifications 6.1.3 diagram A).
If one or more are found at a repeat inspection for a licensable product, then the licensing requirements are not satisfied and the licence for that product is not renewed.

If one or more issues are found at an inspection, then these are recorded on the inspection report form and reviewed at the next inspection. If one or more have not been remedied by the time of the next inspection, and the licensee has not provided a satisfactory written explanation to the general licensee, then the issue may be treated as a nonconformity.

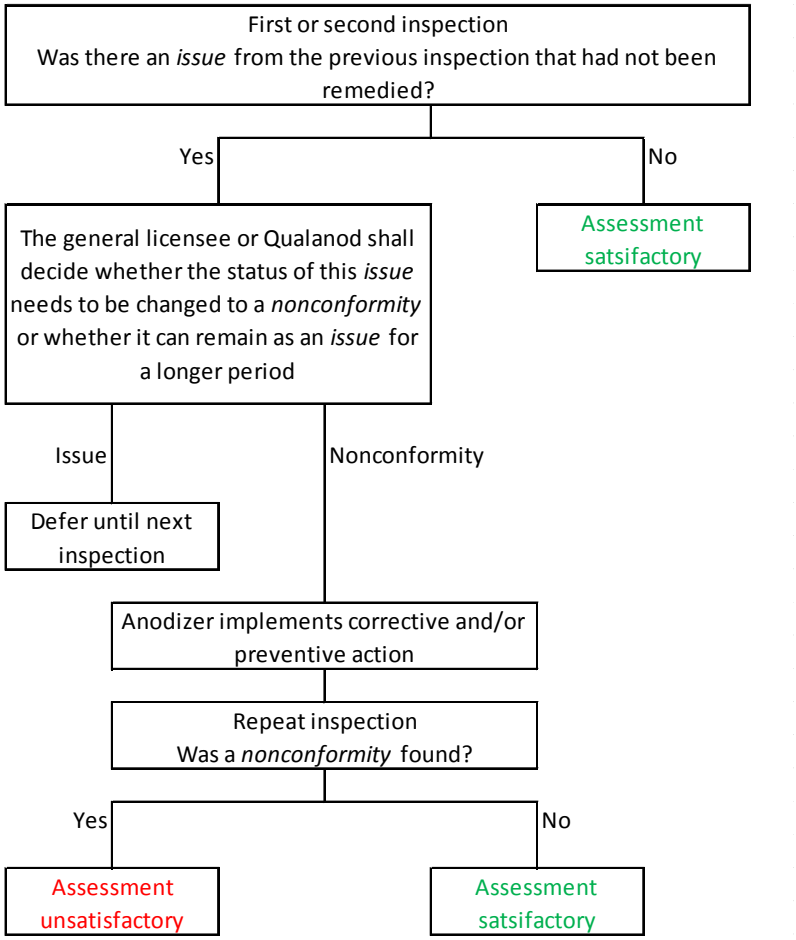
5. Nonconformities and issues determining the results of inspections

The diagrams below show the decision trees for the results from an inspection for a licensable product (anodizing type) depending on whether it was a first, second or a repeat inspection.

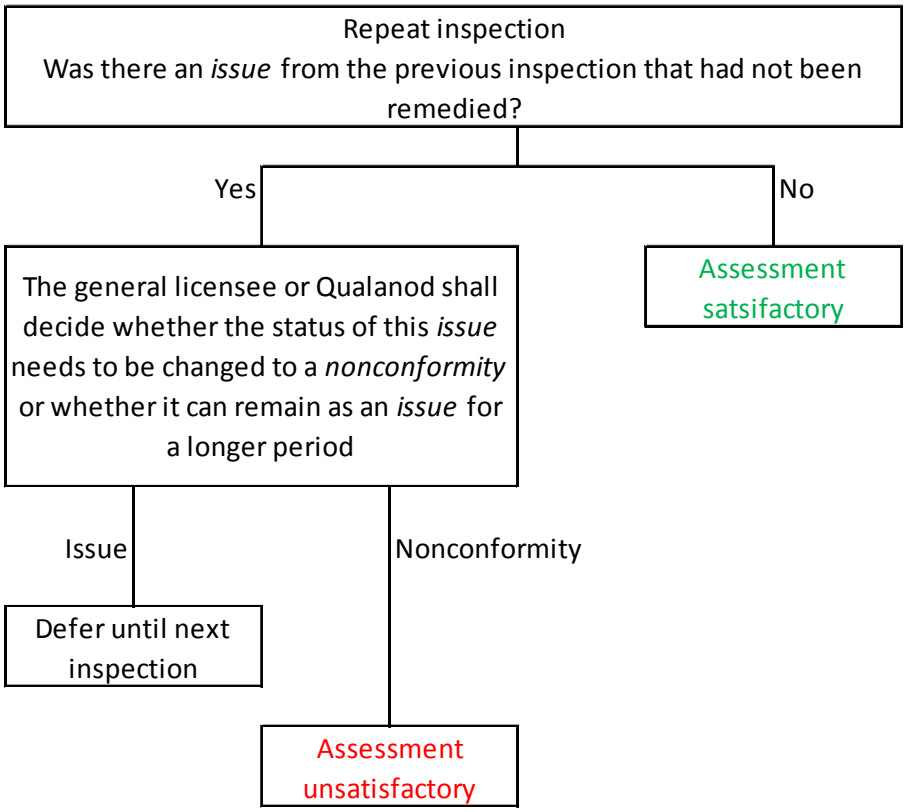
Nonconformities at first or second inspections



Issues at first or second inspections



Issues at repeat inspections



6. Insufficient material for product tests

This section describes the procedure for inspection visits to plants licensed for more than one type of anodizing but where there is insufficient or no material available for the thickness tests of one or more types. Sufficient material is defined by Specifications section 8.3.6.

A general licensee can renew a sub-licence of an anodizing plant if at least two inspections per calendar year are satisfactory for each licensable product for which the plant seeks to use the label (Specifications section 6.3.4). One of those inspections may involve insufficient material.

In the description below, “type X” refers to an anodizing type for which insufficient or no material is available.

- There must be available sufficient material of at least one of the other anodizing types. Otherwise, the inspection is unsatisfactory.
- The inspection for type X shall not be satisfactory if full coating thickness tests (at least 30 samples) for at least one other anodizing type are negative.
- If type X is architectural, industrial or decorative anodizing, then the inspection for type X shall not be satisfactory unless one or more mass loss tests have been carried out and all were positive. (Mass loss tests are independent of anodizing type – see General Regulations II-8.)
- If type X is architectural anodizing and one or more of the lots tested consists of coatings of class AA 20 or thicker, then the inspection for type X shall not be satisfactory unless the surface abrasion resistance test is positive.

Below are examples of satisfactory inspections in the case of a licensee with labels for architectural (A) and industrial (I) anodizing types. Positive thickness tests are shown by (30) for sufficient material and (<30) for insufficient material.

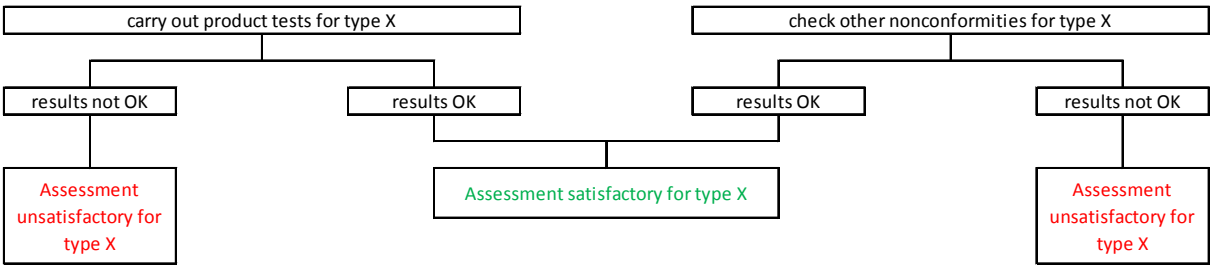
Example 1: *Where both types have sufficient material*
First inspection visit: A (30) and I (30)
Second inspection visit: A (30) and I (30)

Example 2: *In one inspection visit, one anodizing type has insufficient material*
First inspection visit: A (30) and I (30)
Second inspection visit: A (<30) and I (30) OR A (30) I (<30)

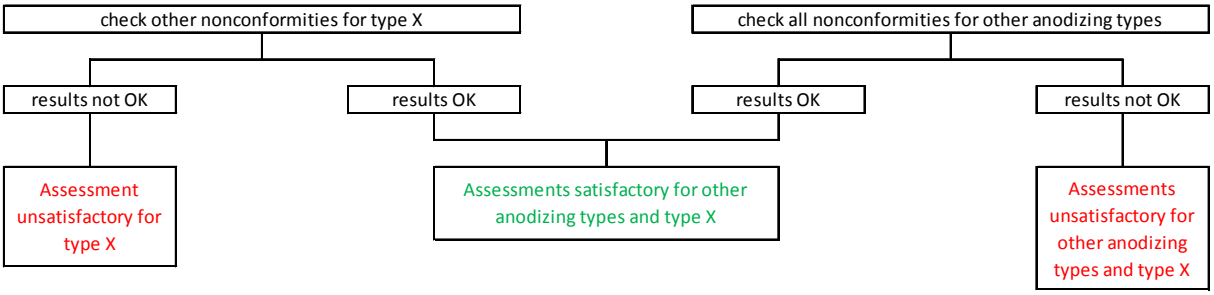
Example 3: *In each inspection visit, a different anodizing type has insufficient material*
First inspection visit: A (<30) and I (30)
Second inspection visit: A (30) and I (<30)

The procedure to determine the result of the inspection for anodizing type X is given in the decision tree below. “Other nonconformities” are ones that do not depend on the availability of material.

Insufficient material for anodizing type X



No material for anodizing type X



1. Introduction

This procedure sets out the criteria for remote inspections to be conducted.

In general, QUALANOD inspections shall be performed physically and unannounced. This remains as standard procedure and shall be the first option.

Remote inspections shall only be used in exceptional situations and shall be authorized. Restrictions and approval process are described under point 3 in this procedure. In addition, also Remote inspections shall be performed unannounced.

2. Referencing Standards for the Accreditation Body

Regarding the ISO 17065 accreditation of QUALANOD and the ISO 17025 accreditation of the testing institute, the International Accreditation Forum (IAF) passed a Mandatory Document (MD) No. 4 issued 04.07.2018 regarding the use of Information and Communication Technology (ICT) for auditing / assessment purposes. The document allows for both, inspection body and assessment body the use of ICT for auditing and assessment, provided the conformances of the IAF are met. In a nutshell, the requirements are:

- Data protection
- Mutually agreement between anodizer and inspector to participate an online audit (remote inspection)
- Identify the risks of an online audit
- Audit plan needs to be set up according to cover these risks
- Technical infrastructure must be checked
- Auditors shall have the competence to carry out online audits
- Additional time as planning the audit may be necessary, please check

The guidelines cover all above requirements.

3. Restrictions and approval process

The following restrictions and approval process apply to perform remote inspections:

1. Remote inspection is only allowed for renewal. All **granting's** must be performed **physically**.
2. Risk assessment according to the below criteria by the testing institute and General Licence holder (for individual licence holder - QUALANOD).
3. The testing laboratory needs to provide evidence to QUALANOD that remote inspection is allowed or not.
4. The involved parties need to provide a "good reason" why physical inspection can't be performed.

   Good reasons are

   a. Danger to the life of the inspector

b. Region of the Licensee needs to be within a crisis area or a crisis warning area or a similar restriction from the local government.
For example: War, natural disasters, epidemics, pandemics, terrorism

c. Travel and visiting restriction by the local government.

d. Visiting restriction by the company itself with understandable reasons. (for example, a confirmed case of infection within the company)

e. Epidemic / Pandemic: remote audits can also be carried out in countries with very limited travel options such as: Evidence of a current negative test (eg PCR test), quarantine on entry, lack of travel connection/infrastructure

5. The company is written to and confirms the possibility of a remote inspection. The guideline is made available to the company.

   If necessary, the video stream is checked in advance (see guideline). Since many other audits (9001, Qualicoat etc.) have now been made online, this point may not be applicable.

   The QUALANOD licenced anodizer needs to **agree** on remote inspection.

6. **Approval of the remote inspection by General Licence holder and QUALANOD.**
   Each inspection needs an **own** approval by all parties.

7. In case of a positive decision the following must be noted on the inspection report

   - that it is a remote assessment and why a remote assessment was carried out (see reasons above)
   - that the anodizer is in agreement with a remote inspection
   - the date of approval of QUALANOD.

4. Requirements and Procedure

The requirements for carrying out remote inspections are defined below.

4.1. Hardware Requirements

Technical requirements for the anodizers are:

- A portable device like a smartphone or tablet with conferencing apps and Camera
- Microphone and Speaker, ideal would be a headset (see picture in the appendix)
- Fast, stable internet
- Device for charging the portable device

During the audit, the inspector can use two screens; one with the inspection report to be filled in and one with the videoconference. In order to carry out “remote-inspections”, it may needs a special training for the inspectors.

4.2. Pre-Check of Feasibility

Before the audit, the internet connection needs to be checked by the inspection body. The inspector will call the licence holder in advance, checking the connection, the internet speed and the quality of the video stream. Within this pre-check a suitable video-conferencing platform will be agreed by testing body and anodizer (e.g. Teams, Skype, GoToMeeting, Zoom, Webex, etc.). If necessary, the technical contact of the company will get a training for the video conferencing by the inspector.

In order to make the working environment for the audit better, the company receives a “check list” with the objects an inspector will ask for during the audit and a flow chart for the inspection. This way the inspection is kept focussed and does not run out of time. **The inspection by itself will be unannounced.** The anodizer is made aware of this.

4.3. Procedure for the Online Inspections

In the morning (in case of time difference morning of the anodizer), the inspector calls the licence holder to carry out an inspection. As the video-conferencing platform app should be pre-installed, the inspection should be able to start without delay (unannounced inspection).

The audit will be split into different modules, which are worked through step by step (see flow chart chapter 4). Breaks for charging the (mobile) devices or have a rest will be necessary as well. Probably there will also be some deviations from the procedure in the flow chart depending on the course of the audit. The timespan for the inspection is the usual 4-6 hours as the whole process will be checked in the usual way.

At the end of the inspection, the inspector discusses the issues and non-conformities and sends the checklist to the company for their signature. The inspector finalises the inspection report and sends it to the respective party.

4.4. Data Protection

The video material of the inspection will not be shown to third parties and kept confidential between anodizer and inspector. There are no records of the video-stream stored, photos will be stored separately at the inspection body. The data of the inspection will be recorded as usual in the current valid version of the master inspection report.

5. Checklist for the Anodizing Plant

5.1. Documentation / Inhouse Control

The anodizer should be prepared to show the inspector the following documentation which may be either paper-based or in computer files. If necessary, they can be shown using the share-screen facility of the video conferencing software.

1. The plant's Qualanod licence showing the anodizing types for which the plant is licensed.
2. A selection of documents showing agreements with customers.
3. The plant's register of complaints.
4. The production control records.
5. Suppliers' written instructions for the use of processes they have supplied.
6. The plant's standard operating practices.
7. The approval numbers for any processes used by the plant that require Qualanod approval.
8. Copies of the ISO standards specifying the tests that the plant applies or written working instructions based on those standards.
9. Data sheets for each testing apparatus showing the apparatus identification number, calibration checks and maintenance service records.
10. Evidence that the glass-coated abrasive paper has been validated (only if the ISO 18771 test method is used).
11. Where subcontracted product tests are carried out.
12. A selection of documents showing the plant's use of the quality label.
13. Reference foils for the thickness gauge.
14. pH buffers-especially the expiry date.
15. Process for anodizing: Short process description of chemical pre-treatment, anodizing and sealing with:
    - products and process parameters recommended by chemical supplier:
        - bath analyses,
        - temperature,

- sealing time
- pH value (sealing bath)

5.2. Visual observation

The anodizer should be prepared to show the inspector the following by walking around the plant and using a camera ideally linked to the video conferencing.

1. The anodizing lines and any mechanical pretreatment facilities. The inspector should be told what solutions are in the baths.
2. The monitoring of solution temperatures.
3. The storage of aluminium products both before and after anodizing.
4. The laboratory and testing apparatus.
5. The stock of chemicals needed for product testing and solution analyses. The inspector will want to verify that all are available.

The inspector will want to witness the following. A camera should be used ideally linked to the video conferencing.

1. The use of the testing apparatus to determine any deviations from standards.
2. The application of the product tests to actual products
3. The analysis of bath solutions (although he might not watch the analyses completely from beginning to end).

5.3. Inspection of products

The anodizer should be able to identify finished products for inspection, which it has inspected and passed as satisfactory or parts which have been packed and/or are ready for dispatch. The inspector will want the anodizer to carry out thickness measurements on at least 30 parts for each type of anodizing. This could consist of many lots with different numbers of parts in each. For each lot, the anodizer should be able to show the inspector documentation tracing back to the customer's order. It is important that the lots selected include ones from all the anodizing lines in the plant and include all the sealing processes operated by the plant.

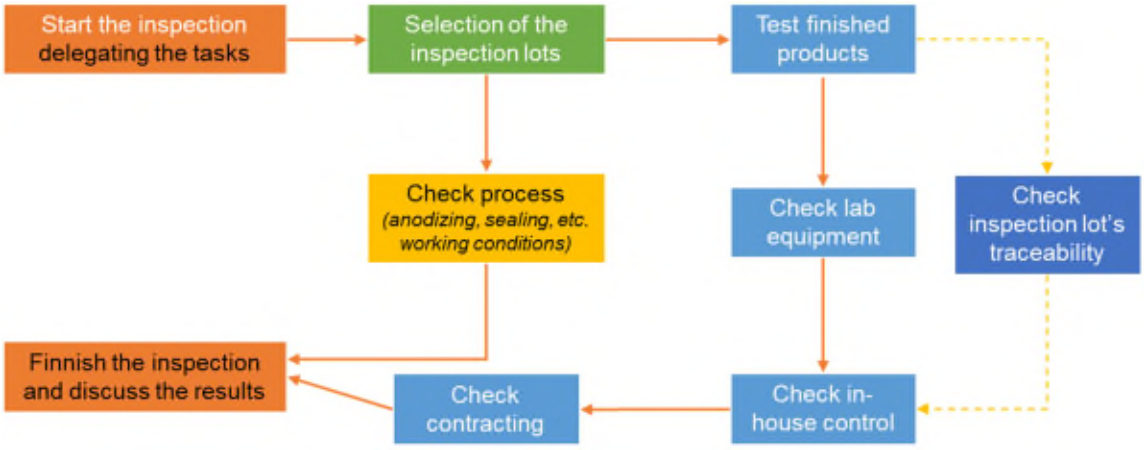
If test specimens cannot be taken from a production lot, then the inspector will expect special test specimens made of the same alloy as the production lot and treated simultaneously with it to be available. If it had not been possible to produce those, then the inspector will expect special test specimens made of an alloy containing at least 97% aluminium and treated simultaneously with the production lot to be available. Circumstances which might lead the licensee to produce special test specimens include those where: i) it is not possible to take specimens from the production lot because of the shape, size or form of the product; ii) multiple lots of different alloys are treated together; iii) the lot comprises only one piece.

If there are insufficient parts of one anodizing type, special rules apply. The inspector might want thickness measurements carried out on the parts that are available.

Depending on the further product testing that is required, the inspector will identify samples for those tests from the lots subjected to thickness measurement. Those tests could include the dye spot, admittance, mass loss, surface abrasion resistance and/or wear tests. He will want the anodizer to carry out those tests although he may request that samples be sent to testing institutes for the mass loss, surface abrasion resistance and/or wear tests. The dye spot and admittance tests should always be performed in the plant. If samples are to be to send to a testing institute, the inspector will want to observe each one being uniquely marked so that it can be identified on arrival at the testing institute.

6. Flow Chart

In this section, the modules/blocks of the online inspections are visualized in a flow chart.



7. Appendix

7.1. Helpful Technical Equipment

The following technical equipment are examples, you may use different equipment adapted to the situation (e.g. security helmet, etc).

1. Introduction

General Regulation VI specifies the procedure to gain approval for the use of a process for use in architectural anodizing. Such approval is necessary before a licensee may use the process for architectural anodizing. This is because it is not possible to apply a simple test that adequately simulates outdoor exposure conditions. However, approval is not required for such a process to be used for industrial, decorative or hard anodizing. This is because the tests specified by Qualanod effectively simulate the service conditions encountered by products from those types of anodizing.

Nevertheless, for commercial reasons, sometimes suppliers of processes not intended for architectural anodizing but intended for industrial, decorative or hard anodizing want recognition from Qualanod. This document sets out a procedure whereby the capability of such a process can be assessed by Qualanod if so requested by the supplier.

2. Definitions

QN means Qualanod secretariat.
EC means Qualanod executive committee.
TC means Qualanod technical committee or its nominated working group.
GL means general licensee which may include national associations and Qualanod. GLs can be accredited to ISO/IEC 17065 “Conformity assessment -- Requirements for bodies certifying products, processes and services”.
SL means sub-licensee.
TI means testing institute (organization accredited to ISO 17025 and mandated by a GL to carry out inspections and/or tests). The TI may subcontract to a suitably qualified organization.

The applicant may be the manufacturer or a supplier of the process, or an SL that wants to use the process.

The clauses referred to below are those of this document.

3. Assessment and evaluation

The assessment can comprise the following stages.

A. A review by TC of the information sent by the applicant.

B. Independent laboratory tests carried out by a TI.

C. Evaluation by the TC

The applicant shall bear all the costs associated with the specimen preparation and testing.

4. Certification

Qualanod may certify that products produced using the process have performed satisfactorily during laboratory tests. The certification will specify the conditions of use of the process and the product tests that were applied.

The TC may permit the repetition of a test.

The certification may be renewed every five years. The applicant may apply for a renewal of the certification (see section 6 below). For the renewal to be granted, products produced using the process have to perform satisfactorily during laboratory tests, including any tests for simulation of service conditions.

5. Responsibilities

The applicant may contact QN for advice on fulfilling its responsibilities as described below.

Procedure to obtain certification

• 5.1	• Applicant	• Sends application to GL. • GL sends application to QN for consideration by TC
• 5.2	• TC	• Reviews the information from the applicant and decides whether it is complete.
• 5.3	• QN	• Informs applicant and GL of the TC's decision. • If the information is incomplete, requests the additional information. • If the information is complete, go to next step.
• 5.4	• QN	• Coordinates agreement between the TC and the applicant on the conditions to be used in the production of test specimens and the product tests that will be applied. • Informs the GL of the resulting agreement.
• 5.5	• GL	• Informs applicant and QN which TI will conduct the tests.
• 5.6	• Applicant	• Arranges for the provision of test specimens prepared as specified in clause 7. • Instructs the TI to perform the laboratory tests as specified in 8.1 and 8.2, and to send the test results including any artificial-atmosphere corrosion test specimens for evaluation as instructed by QN.
• 5.7	• TC	• Evaluates the laboratory test results and any artificial-atmosphere corrosion test specimens returned after completion of those test. • If the assessment is successful, recommends that the EC certifies the process for a period of five years.
• 5.8	• QN	• Informs the applicant and GL of the decision.
• 5.9	• EC	• Decides whether to certify the process for a period of five years.
• 5.10	• QN	• Informs the applicant and GL of the decision. If the certification is granted, QN includes the process on the Qualanod website with its certification number.

Procedure for the renewal of certification

• 5.11	• QN	• Informs applicant and GL six months before the certification expires.
• 5.12	• Applicant	• Informs GL and QN whether it wants to renew the certification under the same terms as previously (go to the next step) or different terms (go to 5.1). • The terms are the conditions to be used in the production of test specimens and the product tests that will be applied.
• 5.13	• GL	• Informs applicant and QN which TI will conduct the tests if it is decided to renew the certification.
• 5.14	• Applicant	• Arranges for the provision of test specimens prepared as specified in clause 7. • Instructs the TI to perform the laboratory tests as specified in 8.1 and 8.2, and to send the test results including any artificial-atmosphere corrosion test specimens for evaluation as instructed by QN.
• 5.15	• TC	• Evaluates the test results and considers the experience of the process since the granting of certification. • If the assessment is successful, recommends that the EC renew the certification of the process for a period of five years.
• 5.16	• QN	• Informs the applicant and GL of the decision.
• 5.17	• EC	• Decides whether to renew the certification of the process for a period of five years.
• 5.18	• QN	• Informs the applicant and GL of the decision. If the certification is not granted, QN removed the process from the Qualanod website.

6. Application for assessment

The application shall be written in English. It shall include the following. TC may ask for more information at its discretion.

- A description of the process.
- A technical data sheet showing the most important properties and instructions for the operation or use of the process.
- Information on the type(s) of anodizing with which the process will be used, and the associated anodized products.
- Information on product performance tests that can be applied for the assessment of the process and the definition of the testing procedures.

If, after certification, the applicant changes the instructions for the operation of the process or the use or the formulation of a chemical product, the certification shall be withdrawn. If the applicant wants the certification to be reapplied or if the assessment of the process has been unsuccessful and the applicant wants the process to be tested again, it shall submit an application for testing as specified in clause 5. The application shall include a description of any changes. TC may compare the instructions and data sheet provided by the applicant at the time of the initial application with those issued to licensees at a later time. In these circumstances, QN shall decide the requirements for certification to be granted.

The applicant may decide that it wants the application handled anonymously. If so, it shall make this clear in its application.

7. Specimen preparation

The specimens shall be prepared in one of the following.

- In the TI's laboratory or pilot line.
- In the applicant's laboratory or pilot line under the supervision of a person representing the TI.
- In an SL's laboratory or pilot line under the supervision of a person representing the TI.
- In an SL's production line under the supervision of a person representing the TI. This is permitted only for processes that already have final approval from Qualanod.

Special care should be paid to the preparation of specimens; they shall be free of defects. The applicant shall provide an analysis of the chemical composition of the metal if so requested by the TC.

Because some of the tests could be comparative, the production of standard (reference) test specimens may be required. The processing conditions for the standard specimens shall be agreed with the TC. It is important that the chemical composition and microstructure of all the specimens are the same, especially for corrosion resistance tests. Therefore, specimens shall come from the same metal casting batch or coil.

The test specimens shall be as follows.

- Test specimens shall be AA 6063 or 6060 flat-panel extrusions or AA 5005 sheet with a thickness of about 2 mm. The specimens for artificial-atmosphere corrosion tests shall have dimensions not less than 150 mm x 70 mm x 1 mm.
- Test specimens of the required size shall be cut from larger areas of material using a guillotine or a saw before the application of the surface treatment processes. Any burrs shall be removed without damaging adjacent areas of the surfaces.

Test specimens shall be marked for identification purposes before the application of the surface treatment processes. The marking shall be made as small as is practical and on those areas of the specimens that are not subjected to visual assessment. Specimens for artificial-atmosphere corrosion tests shall have marking that is durable and remains legible over the whole period of the test. Stamping is a suitable method.

8.1. Procedures for the laboratory tests

The tests shall be agreed with the TC. They shall be selected from those described in clause 9 of the Specifications and from the list provided by the applicant. The anodizing-type decision tree might be helpful.

Each test shall be carried out on triplicate specimens.

Test specimens before testing and control specimens shall be safely stored in a room with a controlled temperature and a relative humidity of 65% or less, or in a desiccator, or sealed in plastic bags with desiccant.

It is important to maintain specimen data records particularly to prevent confusion over the processing conditions used for specimens tested by different organizations. The specimen marking and the records shall use the following identification system of two letters and two numbers.

- S indicates the standard process (If required). N indicates the process being assessed.
- Numbers indicate coating thickness, eg 10 for AA 10.
- C indicates a coloured specimen. U indicates an uncoloured specimen.
- Y indicates a sealed specimen. X indicates an unsealed specimen.
- The final number, 1 to 22, identifies the individual specimen in the set.

Thus, N10UX3 would identify the third specimen from the set of specimens produced using the process being assessed.

8.2. Procedures for the artificial-atmosphere corrosion tests

If these tests are to be applied and if no other standard procedure is indicated, these tests are performed as specified in ISO 9227 for the acetic salt spray (AASS) or the neutral salt spray (NSS) tests.

The corrosivity of the salt spray cabinet shall be checked following the method for evaluating cabinet corrosivity specified in ISO 9227. During permanent operation, the time interval between corrosivity checks shall not be more than three months. The test report shall include the date of the last corrosivity check.

The duration of the AASS test shall be 1000 h. The specimens shall not be cleaned during exposure. Visual examination (including photography) of the test specimens to make a subjective evaluation of the degree of deterioration may be carried out after 500 h and/or 750 h as well as after 1000 h. If such an examination is carried out, the results shall be included in the test report.

The duration of the NSS test shall be 336 h. The specimens shall not be cleaned during exposure. Visual examination (including photography) of the test specimens to make a subjective evaluation of the degree of deterioration may be carried out at the end of the test. If such an examination is carried out, the results shall be included in the test report.

On completion of the salt spray test, the specimens shall be washed with water (without scrubbing) to remove corrosive agents from the surface that could otherwise promote further corrosion during storage and transportation and dried without applying heat.

Photograph all the test specimens. Send copies as instructed by QN.

8.3. Evaluation of salt spray test results by the technical committee

The aim of the test is to assess the resistance to pitting corrosion of the aluminium substrate. By agreement, the performance evaluation of the specimens produced using the process being assessed may be assessed by comparison with standard specimens (to be tested simultaneously). Thus, the TC shall rate the corrosion following the method specified in ISO 10289 and the instructions below.

1. Mask to define an inspection area of 50 cm² on each specimen.
2. Use dot charts from ISO 10289 and/or ISO 8993 to determine A, the percentage of the inspection area showing base metal corrosion.
3. Determine the rating, R_P, if necessary, by using the formula $R_P = 3\ (2 - \log A)$. Note: for $A \leq 0{,}05\%$, $R_P = 10$.
4. Calculate:
   i. R_{PN}, the average of the R_P values for each set of -process specimens
   ii. R_{PS}, the average of the R_P values for each set of standard specimens.
5. Compare each R_{PN} with its equivalent R_{PS}. If $R_{PS} - R_{PN} > 1$, then the -process specimens are unsatisfactory.
6. If any of the sets of -process specimens is unsatisfactory, then the result of the salt spray testing is negative.
7. Report the values of R_P for every specimen and the result to QN.
8. Where multiple evaluations are carried out separately at different locations, QN compares the results. The TC makes the final decision following the majority result.

The TC may take other factors into consideration when deciding whether the specimens prepared using the process performed satisfactorily in the salt spray test. In particular, no specimen should show, after the NSS test, any corrosion pits except those within 1,5 mm of jigging marks or corners.